



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,044	03/03/2006	Takashi Oku	075834.00553	1699

33448 7590 11/05/2008

ROBERT J. DEPKE  
LEWIS T. STEADMAN  
ROCKEY, DEPKE & LYONS, LLC  
SUITE 5450 SEARS TOWER  
CHICAGO, IL 60606-6306

EXAMINER
----------

ZETTL, MARY E

ART UNIT	PAPER NUMBER
----------	--------------

2875

MAIL DATE	DELIVERY MODE
-----------	---------------

11/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/571,044	<b>Applicant(s)</b> OKU ET AL.	
	<b>Examiner</b> MARY ZETTL	<b>Art Unit</b> 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/15/2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,7,9,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,7,9,16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 4, 6, 7, 9, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rika et al. (JP 08-335044) and in view of Wang et al. (US 6,752,507 B2).

Regarding claim 1, Rika et al. teaches a light source for emitting light, and a diffuser (12) disposed between the light source (32; Figure 11) and a liquid crystal display device (paragraph 1), wherein the diffuser is comprised of a continuous body of a first resin material and diffusion elements (paragraph 21), each of the diffusion elements being comprised of a second resin material different from the first resin material (paragraph 21), and the diffusion elements are located within the continuous body of the first resin material and are surrounded by portions of the first resin material (Figure 4).

Rika does not disclose expressly the diffusion elements having a portion of the first resin material located at a light incident side and a portion of the first resin material located at a light emission side.

Wang et al. teaches a light source (30) and a diffuser (40) disposed between the light source and a liquid crystal display device (10; Figure 3), wherein the diffuser is

Art Unit: 2875

comprised of a continuous body of a first resin material (42) and diffusion elements (411, 412; Figure 4), each of the diffusion elements being comprised of a second resin material different from the first resin material, and the diffusion elements are located within the continuous body of the first resin material and are surrounded by portions of the first resin material (col. 3, lines 7-18), the diffusion elements having a portion of the first resin material located at a light incident side and a portion of the first resin material located at a light emission side (Figures 3 and 4).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Rika such that the diffusion elements having a portion of the first resin material located at a light incident side and a portion of the first resin material located at a light emission side as taught by Wang et al. for the purpose of increasing the number of refractions and thus the uniformity of output light.

Regarding claim 2, Rika et al. teaches the diffuser further including a light distribution layer having a prismatic surface facing toward the liquid crystal display (paragraph 68).

Regarding claim 4, Rika et al. teaches the first resin material and the second resin material are resin materials having a refractive index ranging from 1.2 to 1.7 (paragraph 21 ).

Regarding claim 6, Rika et al. teaches the diffuser (12) comprising a light receiving portion (11 ) for receiving the light emitted from the light source formed integrally with the diffuser and disposed more toward the light source (32) than the diffuser (12).

Regarding claim 7, Rika et al. teaches the light receiving portion having a projecting shape (11 b) on a surface thereof facing to the light source.

Rika et al. and Wang et al. do not disclose expressly the projecting shape being a prismatic shape.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have changed the shape of Rika et al. and Wang et al. to a prismatic shape, since it has been held that a mere change in shape of an element is generally recognized as being within the level of ordinary skill in the art when the change in shape is not significant to the function of the combination. Further, one would have been motivated to select the shape of a prism for the purpose of the in coupling efficiency. See *In re Dailey*, 357 F. 2d 669, 149 USPQ 47 (CCPA 1966).

Regarding claim 9, Rika et al. and Wang do not disclose expressly the light receiving portion being composed of the first resin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have omitted layer 11 as shown in Rika et al. or to have made it out of the same material as layer 12, such that prisms were mounted directly on the first

Art Unit: 2875

resin in the invention of Rika et al. and Wang et al., since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art. In re Karlson, 136 USPQ 184.

Regarding claim 16, Rika et al. discloses the liquid crystal display apparatus comprising: a liquid crystal portion (paragraph 1); a backlight (10) for illuminating the liquid crystal display portion; wherein the backlight includes a light source for emitting light, and a diffuser (12) disposed between the light source (32; Figure 11 ) and a liquid crystal display device (paragraph 1), wherein the diffuser is comprised of a continuous body of a first resin material and diffusion elements (paragraph 21), each of the diffusion elements being comprised of a second resin material different from the first resin material (paragraph 21), and the diffusion elements are located within the continuous body of the first resin material and are surrounded by portions of the first resin material (Figure 4).

Rika does not disclose expressly the diffusion elements having a portion of the first resin material located at a light incident side and a portion of the first resin material located at a light emission side, the diffusion elements being completely encapsulated by the first resin.

Wang et al. teaches a light source (30) and a diffuser (40) disposed between the light source and a liquid crystal display device (10; Figure 3), wherein the diffuser is comprised of a continuous body of a first resin material (42) and diffusion elements

Art Unit: 2875

(411, 412; Figure 4), each of the diffusion elements being comprised of a second resin material different from the first resin material, and the diffusion elements are located within the continuous body of the first resin material and are surrounded by portions of the first resin material (col. 3, lines 7-18), the diffusion elements having a portion of the first resin material located at a light incident side and a portion of the first resin material located at a light emission side, the diffusion elements being completely encapsulated by the first resin (Figures 3 and 4).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the invention of Rika such that the diffusion elements having a portion of the first resin material located at a light incident side and a portion of the first resin material located at a light emission side as taught by Wang et al. for the purpose of increasing the number of refractions and thus the uniformity of output light.

Regarding claim 17, Rika further teaches a light focusing layer (11 ) for focusing the light emitted from the light source (32), formed integrally with the diffusion layer (figure 4), and disposed more toward the light source (32) than the diffusion layer (12).

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1, 2, 4, 6, 7, 9, 16, and 17 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hayahshi et al. (US 6,655,810 B2) teaches a lighting unit with a diffuser (456) comprising a first resin (464) completely encapsulating diffusion particles (462; Figure 80).

Tai et al. (US 2006/0083020 A1) teaches a lighting unit with a diffuser (24) comprising a first resin completely encapsulating diffusion particles (Figure 8).

Bragg et al. (US 6,796,697 B1) teaches a lighting unit with a diffuser (4) comprising a first resin completely encapsulating diffusion particles (Figure 6).

Freier et al. teaches a lighting unit with a diffuser (104) comprising a first resin completely encapsulating diffusion particles (Figure 4A).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Zettl whose telephone number is 571-272-6007. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandy O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2875

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MZ

/Mary Zettl/

/Sharon E. Payne/

Primary Examiner, Art Unit 2875